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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,538	07/09/2003	Tatsuya Masuki	59549 (71360)	1953
21874	7590	03/23/2005	EXAMINER	
EDWARDS & ANGELL, LLP P.O. BOX 55874 BOSTON, MA 02205			AUGHENBAUGH, WALTER	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,538

Applicant(s)

MASUKI ET AL.

Examiner

Walter B Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 1 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because "The present invention relates to" is unnecessary, and legal phraseology such as "comprising" and "said" should be avoided. The word "recess" in line 8 of the abstract should be changed to "recessed" (see line 6 of the abstract). The indentation at line 4 should be removed so that the abstract reads as a single paragraph. Correction is required. See MPEP § 608.01(b).

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

3. Claims 1 and 9 are objected to because of the following informalities: in regard to claim 1, "recess" in line 7 of claim 1 should be changed to "recessed" (see line 5 of claim 1). In regard to claim 9, the comma in the second line of the claim should be deleted so that it is clear that the core insert is provided with a metal film on the surface of the core insert facing the cavity, if this is indeed what is intended to be recited. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

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pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 4 and 5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In regard to claims 1 and 4, Applicant's discussion of "surface waviness" as claimed in claim 4 on page 28 of the specification does not distinguish the "surface waviness" property from the "flatness" property as claimed in claim 1 as discussed on page 27 of the specification: use of "is a value obtained by" and "over a maximum measuring length of 30 mm" in regard to "surface waviness" on page 28 of the specification allows "surface waviness" to be the same as the "flatness" property discussed on page 27 of the specification. The "surface waviness" could be "obtained by" the least square method as the "flatness" is, and the "maximum measuring length of 30 mm" allows for a "region of less than 2 mm" as the "flatness" is determined. Furthermore, in regard to claim 1, the exact bounds of the "region" intended to be delineated by the statement "a region of less than 2 mm from an outer periphery of the flat portion" on page 27 of the specification cannot be ascertained, especially when read along with lines 17-21 and 24-27 of page 27 of the specification.

In regard to claims 4 and 5, Applicant's discussion of "surface waviness" as claimed in claim 4 on page 28 of the specification does not distinguish the "surface waviness" property from the "sink mark depth" property as claimed in claim 5 as discussed on page 28 of the specification: both "surface waviness" and "sink mark depth" are the difference along the y-axis

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between the maximum and minimum on the surface roughness curve as established on page 28 of the specification. See the 35 U.S.C. 103(a) rejection of claim 5 for more discussion in regard to the apparent resemblance between these two properties.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 8 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 8 and 10 provides for the use of a metal mold assembly, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 8 and 10 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bird in view of Sylvester et al.

In regard to claim 1, Bird teaches a resin container (carrier tape, item 100) comprising a container body (each pocket, item 112, formed in strip portion, item 102) and a lid (cover, item 120) for closing the container body (col. 4, lines 52-58, col. 4, line 66-col. 5, line 1, col. 6, lines 1-8 and Fig. 1 and 2). Bird teaches that the container body is produced by injection-molding an amorphous thermoplastic resin such as polycarbonate, polystyrene or acrylonitrile-butadiene-styrene (col. 12, lines 44-56 and col. 5, lines 51-57, note that page 6-7 of Applicant's specification states that polycarbonate, polystyrene and ABS, i.e. acrylonitrile-butadiene-styrene, resins are examples of the amorphous thermoplastic resin). Bird teaches that the container body comprises a peripheral rise portion (side walls, item 114) and a recessed flat portion (bottom wall, item 116) defined by the peripheral rise portion (col. 5, lines 1-9 and Fig. 1 and 2). Bird teaches that the pockets, item 112, may be designed to conform to the size and shape of the components that the pockets are intended to receive (col. 5, lines 21-22) and that the depth of the pocket can vary depending on the component that the pockets are intended to receive (col. 5, lines 38-39). Bird teaches that the dimensions of the polymeric web to be injection molded is

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determined by the gauge and width of the carrier tape that is to be formed (col. 12, lines 56-58).

Bird teaches that the carrier tape, item 100, is used to carry electronic components such as chips (col. 1, lines 13-23).

Bird fails to explicitly teach that the side walls, item 114, have a height of 0.5 to 10 mm, that the bottom wall, item 116, has an area of 1 to 100 cm², that the bottom wall, item 116, has an average wall thickness of not more than 0.25 mm and that the bottom wall, item 116, has a flatness of not more than 0.5 mm.

Sylvester et al., however, disclose a chip/package system (col. 1, lines 7-14) and that the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm (col. 2, lines 50-55). Therefore, one of ordinary skill would have recognized to have formed the recessed flat portion of Bird such that it has a flatness of less than 2.5 μm (2.5×10^{-3} mm), since the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm as taught by Sylvester et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the recessed flat portion of Bird such that it has a flatness of less than 2.5 μm (2.5×10^{-3} mm), since the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm as taught by Sylvester et al.

Furthermore, Sylvester et al. teach a chip having an area of 1 to 4 cm² (col. 1, lines 22-25 and 48-50). Therefore, since Bird teaches that the pockets, item 112, may be designed to conform to the size and shape of the components that the pockets are intended to receive (col. 5, lines 21-22), one of ordinary skill would have recognized to have formed the bottom wall, item 116, of Bird such that it has an area large enough that a chip having an area of 1 to 4 cm² can be

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placed within the pocket, item 112, of Bird such that the chip lays flat on the recessed flat portion of the pocket. Furthermore, since Bird teaches that the pockets, item 112, may be designed to conform to the size and shape of the components that the pockets are intended to receive (col. 5, lines 21-22) and that the depth of the pocket can vary depending on the component that the pockets are intended to receive (col. 5, lines 38-39), one of ordinary skill in the art would have recognized to have formed the pockets of Bird such that the height of the side walls, item 114, is sufficient to enclose the particular chip to be enclosed in the pocket, as taught by Bird. Since Bird teaches that the dimensions of the polymeric web to be injection molded is determined by the gauge and width of the carrier tape that is to be formed (col. 12, lines 56-58), and therefore that the thickness of the bottom wall, item 116, is determined based on the particular component to be placed in the pocket, one of ordinary skill in the art would have recognized to have determined the thickness of the bottom wall of Bird that results in the optimal balance between strength of the bottom wall required to withstand the weight of the particular component to be placed in the pocket, and minimization of polymeric material used to form the carrier tape of Bird, depending on the particular desired end use.

In regard to claim 2, the container of Bird constitutes an outer shell for electric parts since Bird teaches that the carrier tape, item 100, is used to carry electronic components (col. 1, lines 13-20).

In regard to claim 3, the container body of Bird (each pocket, item 112) has a rectangular parallelepiped shape (Fig. 1), and longitudinal and lateral lengths of the flat portion (bottom wall, item 116) are larger than the height of the peripheral rise portion (side walls, item 114) (Fig. 1).

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In regard to claim 4, Bird fails to explicitly teach that the bottom wall, item 116, has a surface waviness of not more than 50 μm .

Sylvester et al., however, disclose a chip/package system (col. 1, lines 7-14) and that the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm (col. 2, lines 50-55, no distinction has been afforded between “surface waviness” as recited in claim 4 and “flatness” as recited in claim 1 because “flatness” is defined by Sylvester et al. as “the ratio of the maximum high to low deviation per unit area”, and Applicant defines “surface waviness” as “a value obtained by measuring the difference between a maximum height and a minimum height which are parallel with an ideal plane of the surface to be measured...” on page 28 of the specification). Therefore, one of ordinary skill would have recognized to have formed the recessed flat portion of Bird such that it has a surface waviness of less than 2.5 μm since the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm as taught by Sylvester et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the recessed flat portion of Bird such that it has a surface waviness of less than 2.5 μm , since the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm as taught by Sylvester et al.

In regard to claim 5, Bird fails to explicitly teach that the bottom wall, item 116, has a sink mark depth of not more than 3 μm .

Sylvester et al., however, disclose a chip/package system (col. 1, lines 7-14) and that the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm (col. 2, lines 50-55, no distinction has been afforded between “surface waviness” as recited in claim 4

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and “sink mark depth” as recited in claim 5 because Applicant defines “surface waviness” as “a value obtained by measuring the difference between a maximum height and a minimum height which are parallel with an ideal plane of the surface to be measured, over a maximum measuring length of 30 mm using a surface roughness tester ” on page 28 of the specification, and Applicant determines “sink mark depth” from the “surface roughness of a region and its surrounding portion on the surface to be measured where sink marks are formed is measured by a surface roughness tester to obtain a waviness curve thereof... [and] a distance between a tangent line of a higher inflection point and a tangent line of a lower inflection point is determined as the sink mark depth” on page 28 of the specification; i.e. both “surface waviness” and “sink mark depth” are the difference along the y-axis between the maximum and minimum on the surface roughness curve). Therefore, one of ordinary skill would have recognized to have formed the recessed flat portion of Bird such that it has a sink mark depth of less than 2.5 μm since the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm as taught by Sylvester et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the recessed flat portion of Bird such that it has a sink mark depth of less than 2.5 μm , since the chip packaging industry standard maximum acceptable deviation from flatness is 2.5 μm as taught by Sylvester et al.

In regard to claim 6, the lid, item 120, of Bird is bonded to an edge of the side wall, item 114, of Bird (col. 6, lines 11-20 and Fig. 1 and 2).

In regard to claim 7, the recitation “by a welding method” is a method limitation that has not been given patentable weight since the method of forming the container is not germane to the

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issue of patentability of the container itself. The container body of Bird (each pocket, item 112) and the lid, item 120, are bonded to each other (col. 6, lines 11-20 and Fig. 1 and 2).

In regard to claim 8, the recitation "is produced by an injection-molding method using a metal mold assembly" is a method limitation that has not been given patentable weight since the method of forming the container is not germane to the issue of patentability of the container itself. The remainder of the limitations of claim 8 limit the metal mold assembly, which has not been given patentable weight since the metal mold assembly is in the method limitation, and therefore the remainder of the limitations of claim 8 have not been given patentable weight. The claimed article is a resin container, not a metal mold assembly.

In regard to claim 9, the recitation "the core insert is provided on its surface facing the cavity" is a method limitation that has not been given patentable weight since the method of forming the container is not germane to the issue of patentability of the container itself. Furthermore, the recitation "the core insert is provided on its surface facing the cavity" has not been given patentable weight since "the core insert" and "the cavity" have antecedent basis in the recitations of claim 8 that limit the metal mold assembly that have not been given patentable weight for the reasons provided above. The recitation of claim 9 regarding the metal film and the thickness of the metal film has not been given patentable weight since the metal film is a component of the core insert, which is a component of the metal mold assembly that has not been given patentable weight for the reasons provided above.

All the recitations of claim 10 are method limitations that have not been given patentable weight since the method of forming the container is not germane to the issue of patentability of the container itself.

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Conclusion


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 571-272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter B. Aughenbaugh

03/17/05 WBA


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